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THE FARM MACHINERY OUTLOOK IN THE PRAIRIE PROVINCES

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THE FARM MACHINERY OUTLOOK IN THE PRAIRIE PROVINCES

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Introduction

The objectives in the farm machinery survey were:

- (a) To determine the number and types of farm machines that will be wanted in the early post war years as a guide to production and distribution;
- (b) To determine the types and sizes of farm machines at present on farms and the changes that have occurred;
- (c) To obtain information concerning the length of life of machines and the variation that occurs under different soil conditions and with different types of farming with emphasis on trends and changes occurring;
- (d) To provide a general fund of knowledge concerning farm machinery which would serve to orient specific problems and provide an adequate background for the study.

Procedure

Sampling.- Since the number of farms in western Canada is so very large, the study had to be conducted by getting information from a sample, which was selected in such a manner as to be as representative as possible. The method of selecting the sample had to be adapted in each province to the facilities available for obtaining data. In Alberta, the information was obtained by combining the machinery survey with a Provincial post-war rehabilitation study. In this project the Province undertook to set up local committees to supervise the collection of information and to provide the enumerators. The Dominion Economics Division provided assistance in selecting the sample and in supervising the analysis. Here it was possible to use maps and indicate by lines drawn, the farms to be visited. In the majority of cases these directions were followed, although necessarily in a few cases the instructions were altered and other farms included.

In Saskatchewan, the Agricultural Representatives undertook the enumeration in northern Saskatchewan and field representatives of the Saskatchewan Wheat Pool co-operated in southern areas. This insured collection of data by trained men who were familiar with their own regions, and considerable leeway was given to their judgment in selecting representative farms. They were supplied with a table showing the number of farms of various sizes in each census division as indicated by the 1941 Census of Canada.

In Manitoba, four general methods of getting records were followed. The Agricultural Representatives undertook to secure records from representative farms within their assigned territories. A study of dairy farms in eastern Manitoba was underway and the fieldmen enumerated the machinery on these farms during their fall calls. The farms had already been selected as being representative in the wholemilk area. A large territory in southwestern Manitoba

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has no Agricultural Representatives, but the Brandon Experimental Farm maintains constant contact with this area through the Agricultural Improvement Associations, which include in their membership a high percentage of the farmers in this area. The Experimental Farm co-operated in mailing out questionnaires to the Agricultural Improvement Association members and a sufficient number were completed and returned to give a good sample of the area. When all the above methods had been used and the recorded farms plotted on soil maps, it was found that some gaps in distribution remained, so that a fieldman from the Economics Division proceeded to take additional records to complete the coverage. These records also had the advantage of being taken after certain difficulties of interpretation in analysis had been found and these could be checked by specific questions and by field observations.

As a result of these methods, 1,567 records suitable for enumeration were obtained in Alberta, 1,736 in Saskatchewan and 533 in Manitoba.

This is approximately in the same proportion as the number of farms by Provinces as given in the 1941 Census, except that the Manitoba number appears lower. However, due to the method of conducting the Census and the definition of a farm used, all Provinces are shown as having more farms than actually exist and many more than actually enter into the machinery problem. This is particularly true of Manitoba where 13,000 farms are shown as "self-sufficing", on which over half the value of products are consumed in the house. These farms normally are located where other work such as bush work or fishing provides the main income and where machinery is not much needed because of the small areas farmed.

Analysis of Data -- Method. - In Alberta, the Province desired a report quickly and supplied a large number of helpers for a short time. The data were partly punched on Hollerith cards and some tables run on the tabulator. In addition to this, some hand tabulation was done. In the other Provinces the tabulation was all done by hand with the help of adding machines and calculators. First, the data for each machine were summarized by Census Divisions, soil types, size of farm, and by farm type. Later these summary totals by groups were added together to give the effect of each factor, such as soil type, size of farm and region, separately, leaving the others to cancel out.

Presentation of Results. - In this report the material has been confined to information affecting the three Provinces as a whole and the variation as between Provinces. The variations by regions within Provinces are being held for more detailed Provincial reports. These reports are already prepared, or are being prepared for Saskatchewan and Manitoba. A preliminary Provincial report for Alberta was submitted to the Provincial Legislative Committee on Rehabilitation, about the end of February, 1945 and was later revised for Provincial distribution. It should be emphasized that this report summarizes farmers plans early in 1945.

Tractors

Size. - The tractor has played a dominant role in the development of mechanized farming because the use of many other machines is dependent on the tractor power available. In table 1 a summary is presented of the tractors on farms and wanted, and listed according to the various types and sizes in percentages of the total number. It may be noted that the dominant size of tractor on hand

in all areas is the three plow tractor. The three plow tractor is also the most common size wanted everywhere except in the prairie areas of Saskatchewan, where the four plow tractor is the size wanted by the majority.

Table 1. Size and Type of Tractors on Farms and Wanted by Farmers in the Prairie Provinces

	Saskatchewan							
	Manitoba		Parkland		Prairie		Alberta	
	On	Wanted	On	Wanted	On	Wanted	On	Wanted
	%	%	%	%	%	%	%	%
<u>Size in Plow Bottoms</u>								
Not known	2.2	19.9	-	-	-	-	13.0	13.0
2 plow	15.5	10.8	18.9	10.0	9.4	5.0	12.0	11.0
3 plow	59.3	50.3	47.7	49.0	44.4	30.0	53.0	48.0
4 plow	22.0	18.1	30.4	37.0	40.1	55.0	19.0	24.0
Over 4 plow	1.0	.9	3.0	4.0	6.1	10.0	3.0	4.0
<u>Types</u>								
Not known	8.0	28.5	-	-	-	-	7.0	8.0
4 wheel:								
Steel	49.8	18.6	65.4	7.0	59.6	8.0	22.0	5.0
Rubber	29.5	44.6	26.6	86.0	33.8	86.0	24.0	40.0
Not specified	-	-	-	-	-	-	45.0	45.0
Row crop:								
Steel	1.5	.6	2.2	-	1.2	-	1.0	-
Rubber	9.9	6.6	3.2	5.0	2.4	3.0	-	1.0
Crawler:	1.3	1.1	2.6	2.0	3.0	3.0	1.0	1.0
Average life of machine	16.1 years		14.5 years		15.1 years		13.8 years	

Type.- The most common type of tractor on hand is the four wheel on steel and the type wanted most frequently is the four wheel on rubber. When interpreting the percentages shown it must be borne in mind that these tables were prepared in three separate offices where the basic principles used in analysis were the same throughout, but where minor differences of interpretation could creep in.

Probable Life.- The probable average life of each machine was arrived at by adding the present age of machines and the farmers estimate of probable future use. On this basis Manitoba tends to show a longer average life on practically every machine, than the other two Provinces. This is probably a relationship with average size of farm. In Manitoba when the farms in the sample were sorted by size of farm, it was found that with each increase in size of farm there was a decrease in the average life of machines for each of the major machines studied. This is probably due to the amount of work each machine has to do in a year.

Machines Wanted.- The tractors on farms and wanted in the years to come were obtained on the farm schedules. These were recorded from the sample by Census Divisions. In order to relate this sample to the over-all picture, a suitable method of expansion had to be worked out for each Province. In Alberta, the

Province was divided into prairie and parkland on the basis of the generalized soils map of the Province. Then within each area the figures concerning the number of farms by size groups from the 1941 Census were adjusted and used to give the number of farms by three size groups within each soil zone. Then the sample was expanded within each of these six groups on the basis of the relation of the number of farms in the sample to the number of farms in the group. The totals of each group were then added to get the Provincial total. This method seemed to give the desired result in that the number of machines on farms when expanded corresponded reasonably well with the number of such machines as shown in the 1941 Census, plus the recorded sales since that time. However, by the time the Saskatchewan and Manitoba tables were ready for expansion, data had been obtained from the Census Bureau giving the cultivated acres by Census Divisions. When the sample was expanded on the basis of:

$$\frac{\text{Total cultivated acres}}{\text{Cultivated acres in sample}} \times \text{Number of machines}$$

the method did not require the arbitrary adjustments necessary to correct the number of farms as shown in the Census. The expansions were made by Census Divisions to correct any unevenness of sample and then the results by Census Divisions were added to get the Provincial totals. The accuracy of this method is illustrated well in the case of tractors. The 1941 Census gives the tractors on hand in Manitoba in 1941 as 21,949. The 1941 Census figure plus recorded sales since that time, would give Manitoba 29,008 tractors on farms as of December, 1944. This does not allow for probable disappearance in the meantime. The expanded sample would indicate 27,684 were on farms at December 31, 1944. This would allow for a disappearance of 1,424 tractors, or a rate of disappearance due to wear and obsolescence which is slightly lower than occurred between the Census years of 1931 and 1941. It is reasonable to expect a lower rate of disappearance as many tractors have been kept in use beyond the normal time due to the shortage.

Table 1A. Number of Tractors on Farms and Wanted,
Prairie Provinces 1945-1949 and Later Dates

	: : Manitoba No.	: : Saskatchewan No.	: : Alberta No.	:
Number on farms	27,684	61,164	53,985	
Number wanted: 1945	8,595	25,472	12,070	
1946	2,285	9,054	13,920	
1947	1,496	6,343	7,265	
1948	2,105	4,083	3,150(1)	
1949 or later	18,190	22,941	2,575(2)	
Total	32,671	67,893	38,980	

(1) Includes those wanted in 1948 and later.

(2) Specific date not given.

The number of tractors wanted by years is given in table 1A. The figures presented are comparable by Provinces until 1948, and indicate the expressed

intention to acquire, if available. In Manitoba and Saskatchewan where the staff engaged in analysis were all familiar with farm machinery and its uses, it was felt that some purpose could be served by indicating the machines that would have to be replaced in 1949 or beyond, on the basis of the farm operator's estimate of the future life of the machines at present in use. Exceptions to this procedure occurred whenever the operator indicated an intention of using another type of machine. For example, where a combine was to be purchased no replacement would be considered for the threshing machine and where a one-way disc was to be purchased, no replacement would be necessary for plows. In Alberta no assumptions were made and this difference in the tables must be considered when interpreting the figures for 1949 and beyond.

In general, tractors will be in great demand in 1945 and 1946, due to a backlog of unfilled needs and then the demand would fall away to what may be regarded as a long-time normal. Any failure of supply to meet the needs in 1945 and 1946 would of course carry over into 1947 or beyond, assuming that farm incomes remain near the present level.

Combines

The most rapid increase in recent years of any one machine, has been that of combines. The sales since 1941 in Western Canada are greater than the number on farms shown in the 1941 Census.

Size.- The combines on farms as shown in table 2 are distributed fairly evenly through the various size groups. The prairie area of Saskatchewan shows a preference for the larger machines than is the case in the other areas. Of the combines wanted in the future there is a slight preference in favour of the twelve foot size in all except the Saskatchewan parkland area where the ten foot size is preferred by the majority.

Type.- The most common type of combine on farms is the pull type with an auxiliary motor. The greatest percentage of these are mounted on rubber in all areas except the prairie section of Saskatchewan. There the steel wheels predominate, probably due to an earlier start in the widespread use of combines. The auxiliary motor combine mounted on rubber is the type most preferred in every area, except the prairie section of Saskatchewan where the self-propelled type is more frequently preferred. Since the improved types of self-propelled combines have been introduced recently, it is probable that they will have further preference when they are better known.

Probable Life.- Combines have about the shortest lifetime of any farm machine, due to the numerous parts operated at high speeds and the vibration introduced by the various shaking parts. Table 2 indicates that in Manitoba combines would have the longest life and in Alberta the shortest. This again is probably due to the smaller average size of farm in Manitoba.

Combines Wanted.- The combines on farms and wanted as expanded from the sample are given in table 2A. This table indicates that there will be a large demand in 1945 and 1946 due to unfilled orders and that the general tendency is to increase the use of combines in Western Canada.

Table 2. Size and Type of Combines on Farms and Wanted by Farmers in the Prairie Provinces

	Manitoba		Saskatchewan				Alberta	
	On	Wanted	On	Wanted	On	Wanted	On	Wanted
	%	%	%	%	%	%	%	%
<u>Size in width of cut</u>								
Not known	-	19.0	-	-	-	-	12.0	13.0
6'	27.8	9.2	18.4	14.0	12.0	5.0	16.0	12.0
8'	19.1	21.2	25.7	19.0	12.5	13.0	24.0	19.0
10'	14.8	15.8	16.5	28.0	18.4	25.0	13.0	16.0
12'	33.1	28.3	17.4	23.0	31.9	34.0	19.0	26.0
14' and over	5.2	6.5	22.0	16.0	25.2	23.0	16.0	14.0
<u>Types</u>								
Not known	15.7	33.7	-	-	-	-	40.0	49.0
Auxiliary motor:								
On steel	14.7	1.1	26.1	3.0	40.6	7.0	10.0	4.0
On rubber	40.9	44.6	29.3	48.0	20.8	33.0	10.0	7.0
Not specified	-	-	-	-	-	-	7.0	5.0
Power take-off:								
On steel	5.3	-	6.5	-	8.6	4.0	3.0	3.0
On rubber	15.6	3.3	20.7	19.0	21.4	20.0	11.0	5.0
Not specified	-	-	-	-	-	-	9.0	10.0
Self-propelled:								
On steel	-	-	-	-	-	-	-	-
On rubber	7.8	17.3	-	-	-	-	4.0	11.0
Not specified	-	-	17.4	30.0	8.6	36.0	6.0	6.0
Average life of machine	13.7 years		11.1 years		12.2 years		10.8 years	

Table 2A. Number of Combines on Farms and Wanted, Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	7,435	23,939	12,915
Number wanted: 1945	3,945	18,688	3,570
1946	965	5,451	4,710
1947	537	3,280	1,850
1948	323	1,769	910(1)
1949 or later	5,284	10,062	960(2)
Total	11,054	39,250	12,000

(1) Includes those wanted in 1948 and later.

(2) Specific date not given.

Swathers

Tabulation of swathers was complicated by the number of binders that had been converted to be used as swathers. Some of these were rebuilt in well equipped machine shops and some were used with an absolute minimum of change. In general, converted binders were ignored unless they had been completely rebuilt and could no longer be used as binders.

Size.- The dominant size of swather as indicated in table 3 was the 12' width. This was true of those in use on farms and of those wanted in the future, with the exception that in the prairie area of Saskatchewan a larger size is desired by the majority. The reason for the popularity of larger sizes of swathers than combines is probably the use of binders as swathers along with the smaller combines.

Table 3. Size and Type of Swathers on Farms and Wanted by Farmers in the Prairie Provinces

	Saskatchewan							
	Manitoba		Parkland		Prairie		Alberta	
	On	Wanted	On	Wanted	On	Wanted	On	Wanted
	%	%	%	%	%	%	%	%
<u>Size in width of cut</u>								
Not known	2.9	15.7	-	-	-	-	15	16
6'	2.9	-	-	-	-	-	3	-
8'	5.9	3.9	-	-	-	-	11	5
10'	20.6	9.8	-	-	-	-	9	19
12'	55.9	53.0	-	81	47	47	37	45
14' and over	11.8	17.6	-	19	-	53	25	15
<u>Type</u>								
Not known	45.5	40.2	-	-	-	-	39	53
Power take-off:								
On steel	16.2	3.9	17.4	22	28.1	23	6	2
On rubber	16.2	51.0	21.7	48	7.8	46	7	13
Not specified	-	-	-	-	-	-	7	20
Wheel drive:								
On steel	22.1	3.9	60.9	4	64.1	13	13	3
On rubber	-	1.0	-	26	-	18	6	3
Not specified	-	-	-	-	-	-	22	6
Average life of machine	13.9 years		13.0 years		14.5 years		14 years	

Type.- The wheel driven swather on steel wheels was the most common type on farms in all provinces. The swather with power take-off and mounted on rubber was the type which the majority planned to secure when available.

Probable Life.- The average life of swathers is complicated by the shorter life of the rebuilt binders. Manitoba probably has more of these than the other provinces and this may explain why the usual tendency to longer life of machines in Manitoba does not apply to swathers. The average life only varied from 13 to 14.5 years.

Swathers Wanted.- The number of swathers wanted as expanded from the sample, by years and by provinces is given in table 3A. The demand for swathers like that for combines will be heavy until the unfilled orders are met and then a much lower sale is in prospect. The demand for swathers cannot entirely be interpreted as a demand for factory made machines because a large number of farmers are using binders with varying degrees of conversion. However, the most popular type wanted is the swather with power take-off and mounted on rubber. This necessarily will be a factory built machine.

Table 3A. Number of Swathers on Farms and Wanted, Prairie Provinces, 1945-1949 and Later Dates

	:	:	:	:	
	:	Manitoba	Saskatchewan	Alberta	:
		No.	No.	No.	
Number on farms		4,621	7,194	4,960	
Number wanted:	1945	2,497	7,083	1,565	
	1946	604	1,212	1,800	
	1947	281	726	270	
	1948	157	531	415(1)	
	1949 or later	2,759	3,942	690(2)	
Total		6,298	13,494	4,740	

(1) Includes those wanted in 1948 or later.

(2) Specific date not given.

Pick-Ups for Combines

It was found that reports on the number of pick-ups wanted were very unsatisfactory as many farmers regard these as a part of the combine and it was obvious that many who wanted pick-ups did not report them separately. Therefore, no tabulation is presented, but the number wanted can be gauged approximately from the tabulation on swathers.

Threshers

The thresher is still used where it is desired to save the straw for live stock feed or bedding. In many cases an old thresher is kept for threshing oats and the combine is used for all other grain crops. Many still use the thresher for all the crop.

Size.- Threshers on hand and wanted are shown in three size groups in table 4. It is apparent that the most popular size was the 28-inch cylinder, both in the machines on hand and those wanted.

Type.- The type is not shown in table 4 as the only variation is between steel and wooden frames and the steel frame predominates in threshers wanted so decisively that it was felt that there was no point in including the tabulation.

Table 4. Size and Type of Threshers on Farms and Wanted by Farmers in the Prairie Provinces

	Saskatchewan							
	Manitoba		Parkland		Prairie		Alberta	
	On	Wanted	On	Wanted	On	Wanted	On	Wanted
	%	%	%	%	%	%	%	%
Size in length of cylinder								
Not known	-	28.3	-	-	-	-	7	12
0 - 24"	43.9	32.9	-	44	-	38	44	47
28"	45.9	34.9	-	47	-	50	46	38
32" and over	10.2	3.9	-	9	-	12	3	3
Average life of machine	27.2 years		22.8 years		25.2 years		22.2 years	

Probable Life.- Threshers have a comparatively long life. The average estimated life by areas ranged from 22.2 years in Alberta, to 27.2 years in Manitoba.

Threshers Wanted.- Table 4A gives the threshers wanted by provinces and by years. It may be noted that there is not nearly as many wanted in the future as are already on farms. This means that there will be very little demand for new machines until the surplus of machines on hand are worn out.

Table 4A. Number of Threshers on Farms and Wanted, Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	11,262	25,907	15,725
Number wanted: 1945	741	1,171	1,145
1946	547	1,080	1,155
1947	167	680	1,115
1948	282	749	160(1)
1949 or later	6,617	7,373	555(2)
Total	8,354	11,053	4,130

(1) Includes those wanted in 1948 and later.

(2) Specific date not given.

Binders

Both horse and power binders serve the same purpose, namely to cut the crop and tie it into sheaves. Their function is so similar that in many cases horse binders are drawn by tractors. The Alberta data were tabulated on the assumption that horse and power binders were different types of the same machine, but in Manitoba and Saskatchewan the two were separated primarily because of the different trends in their use. The findings are presented in table 5 and table 5A.

Size.- In horse binders the most common size on farms was the 7-foot in Manitoba and the 8-foot in the other provinces. Of the horse binders wanted, the 8-foot was the most popular in all areas. Power binders of the 10-foot width predominate although it is worthy of note that there are more 8-foot power binders wanted than are already on farms.

Table 5. Size and Type of Binders on Farms and Wanted by Farmers in the Prairie Provinces

		<u>Saskatchewan</u>							
		<u>Manitoba</u>		<u>Parkland</u>		<u>Prairie</u>		<u>Alberta</u>	
		On	Wanted	On	Wanted	On	Wanted	On	Wanted
		farms	farms	farms	farms	farms	farms	farms	farms
		%	%	%	%	%	%	%	%
<u>Power binders</u>									
<u>Size in width of cut</u>									
Not known	-	16.2	-	-	-	-	21	17(1)	
8'	3.3	23.7	-	9	-	9	69	55(1)	
10'	96.7	60.1	-	91	-	91	10	28(1)	
Average life of machine	15.8 years		14.4 years		15.8 years		18.0 years		
<u>Horse binders</u>									
<u>Size in width of cut</u>									
Not known	1.9	25.0	-	-	-	-	21	17(2)	
6'	6.8	1.7	-	1	-	-	4	2(2)	
7'	49.2	33.7	-	19	-	3	30	19(2)	
8' and over	42.1	39.6	-	80	-	97	45	62(2)	
Average life of machine	22.0 years		18.4 years		19.6 years		18.0 years(2)		

(1) Includes horse binders.

(2) Includes power binders.

Type.-There was a preference expressed by many farmers for binders on rubber wheels but the majority had not had enough experience with them to express a choice. The Alberta analysis indicates that 81 per cent of their binders on farms were horse binders, but only 47 per cent wanted horse binders again. About 13 per cent of those wanting binders in Alberta had power binders and 45 per cent want them.

Table 5A. Number of Power Binders on Farms and Wanted, Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	5,608	6,929	73,995
Number wanted: 1945	2,972	5,632	6,230(1)
1946	798	3,059	8,185(1)
1947	587	1,819	6,005(1)
1948	612	1,071	2,620(2)
1949 or later	5,579	4,262	2,055(3)
Total	10,548	15,843	25,095(1)

Horse Binders on Hand or Wanted

Number on farms	26,481	74,665
Number wanted: 1945	1,919	5,766
1946	1,105	4,621
1947	890	4,057
1948	493	3,593
1949 or later	9,163	19,358
Total	13,570	37,395

- (1) Includes horse binders.
- (2) Includes those wanted in 1948 and later.
- (3) Specific date not given.

Binders Wanted.- There is some excess of binders wanted over supply, but the margin is not nearly so great as with tractors, combines and swathers. Table 5A gives the requirements by years and by provinces. It is obvious that there will be an increase of power binders and a decrease of horse drawn binders in Manitoba and Saskatchewan. The same trend probably will prevail in Alberta.

Motor Trucks

The size and probable life of motor trucks is indicated by areas in table 6. Motor trucks as used by farmers, are to some extent interchangeable with motor cars and to some extent with wagons and trailers. Any change in the use of one of these implements is likely to be reflected inversely in the others. In the past very little attempt was made to adapt trucks to farm use. In recent years several attachments have been built such as grain augers and loading winches, that render trucks more useful even though the chassis itself may have changed little. The result is a trend towards the use of more trucks in spite of a corresponding tendency to use rubber tired trailers hauled by rubber-tired tractors equipped with high speed gears.

Size.- Trucks on farms and wanted are distributed through all size groups from one half ton up to two ton or more. In Manitoba the prevailing size is one half ton, and the one preferred most frequently is the ton and a half truck. In Saskatchewan the farmers in the parkland area reported a preference for the half ton size, while in the prairie section the ton size is the most popular. In Alberta the half ton truck size is the most common and the ton size the most preferred.

Table 6. Size and Type of Trucks on Farms and Wanted by Farmers in the Prairie Provinces

	Saskatchewan							
	Manitoba		Parkland		Prairie		Alberta	
	On	Wanted	On	Wanted	On	Wanted	On	Wanted
	%	%	%	%	%	%	%	%
Size in tons								
Not known	.8	15.5	-	-	-	-	17	11
$\frac{1}{2}$ ton	31.3	14.9	46.8	47	27.4	27	38	24
1 ton	24.7	24.3	27.4	27	39.3	39	17	34
$1\frac{1}{2}$ tons	21.6	28.0	14.0	14	20.6	21	10	10
2 tons and over	21.6	17.3	11.8	12	12.7	13	18	21
Average life of machine		16.3 years		15.0 years		15.3 years		13.2 years

Probable Life.- The estimated probable life varies by areas from 16.3 years in Manitoba to 13.2 years in Alberta. This variation is probably affected by distances from market as well as size of farm.

Trucks Wanted.- The number of motor trucks and cars on hand and wanted are indicated in table 6A. It would seem that the long time trend in Manitoba and Saskatchewan will be to increase the use of trucks. Alberta will probably show the same trend. There is some evidence of an accumulation of unfilled orders to be met in 1945 and 1946 or beyond.

Motor Cars

Motor cars in use do not vary much in size or type and these are not presented in table form.

Probable Life.- The probable life of cars varies greatly according to the amount of use. The average life estimated by areas, ranged from a low of 12.3 years in Alberta to a high of 18.3 years in Manitoba. These variations would be influenced materially by distances to be travelled and the percentage of surfaced roads.

Cars Wanted.- The cars on farms and wanted as expanded from the sample are presented in table 6A. It would appear that there is not as large an accumulation of unfilled orders for cars on farms as there is for trucks. Furthermore, the long-time trend in Manitoba and Saskatchewan seems to be towards less cars on farms rather than more. This would probably be due to a tendency to

use more trucks and the number of half ton light delivery trucks wanted suggests this. However, the decrease in cars wanted in Manitoba and Saskatchewan combined is 12,790, while the expected increase in trucks is only 10,000. However, although there seems to be a tendency to replace cars and light trailers with trucks, there is also a smaller tendency to replace trucks with heavy trailers to be hauled by rubber-tired tractors equipped with high speed gears. The latter may account for the difference between the increase in the number of trucks wanted and the apparent decrease in cars.

Table 6A. Number of Trucks and Motor Cars on Farms and Wanted, Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
<u>Trucks</u>			
Number on farms	8,260	26,623	19,835
Number wanted: 1945	3,361	11,675	2,965
1946	1,847	6,267	6,335
1947	552	3,405	3,145
1948	226	2,848	910(1)
1949 or later	4,382	10,320	1,355(2)
Total	10,368	34,515	14,710
<u>Motor Cars</u>			
Number on farms	22,714	50,674	47,370
Number wanted: 1945	1,745	4,257	2,190
1946	2,076	5,162	5,790
1947	1,395	6,349	5,160
1948	1,154	4,638	2,240(1)
1949 or later	15,167	18,475	2,075(2)
Total	21,537	38,881	17,455

(1) Includes those wanted in 1948 and later.

(2) Specific date not given.

Tractor Plows

Horse drawn plows, one-way discs and tractor plows are all more or less interchangeable in function and an increase of one is likely to be reflected by a decrease in the others. This must be kept in mind when considering these three machines.

Size.- The percentage of tractor plows on farms and wanted by size groups and by provinces is given in Table 7. From this table it is obvious that the three bottom plow is the most popular size now in use and wanted in the future. No

other single size approached it in popularity except in the prairie region of Saskatchewan where a four bottom plow was wanted by 38 per cent of those indicating purchases of tractor plows.

Table 7. Size and Types of Tractor Plows on Farms and Wanted by Farmers in the Prairie Provinces

	Manitoba		Saskatchewan		Prairie		Alberta	
	On	Wanted	On	Wanted	On	Wanted	On	Wanted
	%	%	%	%	%	%	%	%
<u>Size in plow bottoms</u>								
Not known	-	21.7	-	-	-	-	20	18
1B	.3	1.0	-	8	-	1	2	1
2B	11.6	10.6	-	15	-	7	13	9
3B	63.5	48.7	-	52	-	54	48	56
4B	24.6	18.0	-	25	-	38	15	15
Over 4B	-	-	-	-	-	-	2	1
<u>Types</u>								
Not known	11.0	35.4	-	-	-	-	(No infor-	
Pull	89.0	64.6	-	96	-	86	(mation	
Integral	-	-	-	2	-	4	(as to	
Breaker	-	-	-	2	-	2	(type	
Disc	-	-	-	-	-	8	(
<u>Average life of machine</u>								
	21.2 years		18.8 years		20.1 years		18.0 years	

Type.- Pull type of plows are by far the most common on farms supplying this information.

Probable Life.- The life of tractor plows is comparatively long, ranging in average by areas from 18.0 years to 21.2 years.

Tractor Plows Wanted.- The number wanted by years is shown in table 7A. There is apparently some accumulation of demand to be met in 1945 and 1946, especially in Manitoba. The long-time prospect is for an increase in numbers in Manitoba and a decrease in Saskatchewan.

Table 7A. Number of Tractor Plows on Farms and Wanted, Prairie Provinces, 1945-1949 and Later Dates

		Manitoba	Saskatchewan	Alberta
		No.	No.	No.
Number on farms		17,255	34,653	36,445
Number wanted:	1945	5,283	7,363	6,380
	1946	1,522	3,073	6,860
	1947	394	2,497	2,590
	1948	725	1,385	1,155(1)
	1949 or later	13,918	17,345	2,350(2)
Total		21,842	31,663	19,335

(1) Includes those wanted in 1948 and later.

(2) Specific date not given.

Horse Plows

Horse drawn plows are one of the commonly found implements on farms at present. This must be kept in mind when considering trends.

Size.- Table 8 gives the percentages of the horse plows in the various size and type groups. The two bottom plow is the most common size by a considerable margin. In fact, they were so common that many farmers did not supply the information because they thought the size preferred would be self-evident.

Table 8. Size and Type of Horse Plows on Farms and Wanted by Farmers in the Prairie Provinces

	Manitoba		Saskatchewan				Alberta	
	On farms	Wanted	On farms	Wanted	On farms	Wanted	On farms	Wanted
	%	%	%	%	%	%	%	%
<u>Size in plow bottoms</u>								
Not known	.2	100	-	-	-	-	36	34
1B	11.7	-	-	1	-	7	13	17
2B	84.5	-	-	93	-	86	48	44
3B	3.6	-	-	6	-	7	3	5
<u>Types</u>								
Not known	3.8	100	-	-	-	-	46	41
Walk	3.8	-	-	-	-	4	3	4
Sulky	8.7	-	-	1	-	6	7	9
Gang	83.7	-	-	99	-	89	44	46
Disc	-	-	-	-	-	1	-	-
<u>Average life of machine</u>								
	27.8 years		21.9 years		24.5 years		22.9 years	

Type.- The gang plow was the most important type. A few farm operators still want walking plows or sulky plows for plowing gardens, hog lots and field edges.

Probable Life.- The estimated life ranged from 21.9 years to 27.8 years.

Plows Wanted.- While table 8A indicates that horse plows are likely to decline greatly in the next few years, there are quite a number of farms in special locations or with limited acres cultivated, that still plan to use horse drawn plows. However, there will be so many second hand plows available for a few years to be replaced with tractor plows and one-way discs, that the long-time demand will probably not be reflected in the new plow market for several years, unless a major depression reverses the trend.

Table 8A. Number of Horse Plows on Farms and Wanted, Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	26,830	67,096	59,395
Number wanted: 1945	173	1,060	930
1946	324	345	565
1947	25	1,161	890
1948	55	845	420(1)
1949 or later	3,050	8,480	415(2)
Total	3,627	12,391	3,220

(1) Includes those wanted in 1948 and later.

(2) Specific date not given.

One-Way Discs

The use of the one-way disc as the only cultivation implement is increasing but as yet is only practised in a few districts. Its popularity has been due to the tendency to leave trash cover on top of the soil, thereby aiding in the control of soil drifting. It also has a lighter draft per square foot than plows.

Size.- The sizes of one-ways and the percentage on farms and wanted, falling in size groups, is given in table 9. The two groups most commonly found on farms or wanted, are the 5 and 6 foot units and the 7 or 8 foot size. Of the one-way discs wanted, there is a slight tendency to favour the 5 and 6 foot size. This trend to smaller sized machines is the reverse of the trend found in all other power machinery. It may be due to a tendency to underestimate the draught of a one-way disc when first purchasing one.

Table 9. Size and Type of One-Way Discs on Farms and Wanted by Farmers in the Prairie Provinces.

	Manitoba		Saskatchewan		Alberta	
	On farms	Wanted	On farms	Wanted	On farms	Wanted
	%	%	%	%	%	%
Size in width						
Not known	-	25.9	-	-	-	17
0 - 4'	2.9	2.5	8.5	8	2.0	3
5 - 6'	49.8	38.5	46.2	52	28.1	30
7 - 8'	35.0	26.6	34.7	33	50.4	49
9' and over	12.3	6.5	10.6	7	19.5	18
Average life of machine	18.0 years		13.5 years		12.1 years	14.1 years

Probable Life.- The life of one-way discs is affected by the extent to which the operator depends on it as the method of cultivating. It is still customary in Manitoba to have a plow, or plows along with the one-way. In southern Saskatchewan there are more farms where the one-way does all the tilling of the soil.

The life of a one-way in southern Saskatchewan was estimated to average 12.1 years, while in Manitoba it was estimated to be 18.0 years.

Table 9A. Number of One-Way Discs on Farms and Wanted, Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	12,205	41,181	31,290
Number wanted: 1945	5,668	18,657	6,055
1946	579	5,791	6,450
1947	518	3,778	2,365
1948	355	2,285	285
1949 or later	9,622	24,180	100
Specific date not given			1,495
Total	16,742	54,691	16,750

One-Ways Wanted.- The number of one-ways wanted by years is given in table 9A. There seems to be a considerable accumulation of demand beyond the supply available. There seems to be a definite long-time trend to increase the numbers used in Manitoba and Saskatchewan and probably Alberta. While there are more one-ways per 100 farms now in Saskatchewan than in Manitoba, their estimated increase in numbers is about the same percentage of machines on hand as that in Manitoba.

Seeder Attachments for One-Way Discs

These are more or less standardized as to type and the size must conform to that of the one-way itself. However, the numbers wanted are shown in table 9B. Large numbers of farmers in Saskatchewan have these seeder attachments and more want them. There are comparatively few in Manitoba and fewer are indicated. Another peculiarity of the Manitoba situation is that many with

Table 9B. Number of Seeder Attachments on Farms and Wanted in Manitoba and Saskatchewan, 1945-1949 and Later Dates (Expanded from sample)

	Manitoba	Saskatchewan
	No.	No.
Number on farms	1,881	26,214
Number wanted: 1945	524	7,881
1946	-	3,134
1947	-	1,834
1948	-	1,066
1949 or later	1,325	16,275
Total	1,849	30,190

seeder attachments do not intend to replace them, but some increase is wanted in Census Divisions 3, 4, 8, 10 and 11. These Census Divisions comprise the south-west corner of Manitoba and along the Saskatchewan boundary in the southern part. The normal practice in southern and eastern Manitoba is to prepare as much of the cropland as possible in the previous fall and this may be the reason fewer seeder attachments are wanted in this area.

Grain Seeders

The grain seeders sizes, types and probable life are indicated in table 10.

Table 10. Size and Type of Grain Seeders on Farms and Wanted by Farmers in the Prairie Provinces

	Manitoba		Saskatchewan				Alberta	
	On	Wanted	On	Wanted	On	Wanted	On	Wanted
	%	%	%	%	%	%	%	%
<u>Size in runs</u>								
Not known	.6	26.5	-	-	-	-	20	20
16 - 20 runs	63.8	35.4	72.9	59	42.6	30	62	57
21 - 24 runs	24.6	23.8	15.5	19	18.0	15	10	14
25 - 28 runs	10.6	14.1	11.5	21	37.7	52	8	8
29 runs and over	.4	.2	.1	1	1.7	3	-	1
<u>Types</u>								
Not known	17.6	36.4	-	-	-	-	23	24
Shoe	9.0	3.4	13.7	6.0	3.6	3	7	7
Single disc	16.1	7.3	19.0	12.0	10.6	8	52	43
Double disc	56.9	51.9	64.4	75.0	77.4	74	15	19
Press	.4	1.0	2.9	7.0	8.4	15	3	7
Average life of machine	24.35 years		20.1 years		17.5 years		20 years	

Size.- The 20 run grain drill is the most common size in every area. It also seems to be the most popular for the future, except in the prairie region of Saskatchewan where the 28 run power drill seems to be more in demand.

Type.- The double disc drill is by far the most common in Manitoba and Saskatchewan, but the single disc is the most common in Alberta. The press drill appears to be gaining in all areas but as yet it is little used.

Probable Life.- The estimated average life varied from 17.5 years in the Saskatchewan prairie area to 24.4 years in Manitoba.

Seeders Wanted.- These are given in Table 10A. There appears to be some accumulation of demand for seeders though not as marked as with combines and tractors. It would appear that the numbers of seeders will be static in Manitoba, but decreasing in Saskatchewan, due to the expected increase of seeder attachments for one-way discs there.

Table 10A. Number of Grain Seeders on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	29,068	66,929	65,400
Numbers wanted:			
1945	4,658	9,498	5,400
1946	2,856	6,205	350
1947	1,293	4,512	40
1948	1,436	3,326	-
1949 or later	19,193	29,691	9,035(1)
Total	29,436	53,232	14,825

(1) Specific date not given.

Cultivators and Spring Tooth Harrows

The sizes and probable life of these machines are indicated in tables 11 and 12. The numbers wanted by years are indicated in tables 11A and 12A.

Table 11. Size and Type of Cultivators on Farms and Wanted by Farms in the Prairie Provinces

	Manitoba	Saskatchewan		Alberta
	On farms	Parkland	Prairie	On farms
	Wanted	Wanted	Wanted	Wanted
	%	%	%	%

Size in width

Not known	1.4	27.1	-	-	-	24	17
6'	6.2	1.8	-	3	-	4	7
8'	51.7	29.7	-	48	-	34	33
10'	(36.4	(38.1	-	(40	-	(51	23
12'	((-	(-	(13
14' and over	4.3	3.3	-	9	-	14	3

Average life of machine	22.3 years	17.7 years	20.1 years	17.9 years
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Sizes.- The 8 and 10 foot sizes of cultivators are the most common sizes on farms and wanted. The four section or smaller, spring tooth harrow is the most sought after size.

Table 11A. Number of cultivators on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	: Manitoba	: Saskatchewan	: Alberta	:
	No.	No.	No.	
Number on farms	25,606	34,482	34,160	
Number wanted: 1945	4,567	9,573	3,675	
1946	1,671	4,617	3,190	
1947	609	3,215	2,170	
1948	498	1,890	1,200(1)	
1949 or later	18,610	27,099	1,420(2)	
Total	25,955	46,394	11,655	

(1) Includes those wanted in 1948 and later.

(2) Specific date not given

Probable Life.- Average ages by areas range from 17.7 to 22.3 years for cultivators and from 19.4 to 25.5 years for spring tooth harrows.

Table 12. Size and Type of Spring Tooth Harrows on Farms and Wanted by Farmers in the Prairie Provinces

	: Saskatchewan								:
	: Manitoba		: Parkland		: Prairie		: Alberta		:
	: On	:	: On	:	: On	:	: On	:	:
	:farms	:Wanted	:farms	:Wanted	:farms	:Wanted	:farms	:Wanted	:
	%	%	%	%	%	%	%	%	
Size in sections									
Not known	-	39.8	-	-	-	-	33	23	
0 - 4 sections	58.6	32.9	-	84	-	52	53	55	
5 sections or more	41.4	27.3	-	16	-	48	14	22	
Average life of machine	25.5 years		19.8 years		20.7 years		20.9 years		

Wanted.- The numbers of cultivators wanted in Manitoba and Saskatchewan is greater than the number on hand which points to an increase in the use of this implement. On the other hand there are less spring tooth harrows wanted than are already on hand.

Table 12A. Number of Spring Tooth Harrows on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	: Manitoba	: Saskatchewan	: Alberta	:
	No.	No.	No.	
Number on farms	9,302	14,027	13,745	
Number wanted: 1945	1,092	598	260	
1946	439	620	235	
1947	258	281	270	
1948	59	310	115(1)	
1949 or later	6,379	7,892	230(2)	
Total	8,227	9,701	1,110	

(1) Includes those wanted in 1948 and later.

(2) Specific date not given.

Disc Harrows

The sizes and types of disc harrows are listed in percentages of total in table 13. The probable life is also given in table 13 and the disc harrows wanted by years in table 13A.

Table 13. Size and Type of Disc Harrows on Farms and Wanted by Farmers in the Prairie Provinces

	Manitoba		Saskatchewan				Alberta	
	On farms	Wanted	On farms	Wanted	On farms	Wanted	On farms	Wanted
	%	%	%	%	%	%	%	%
<u>Size</u>								
Not known	1.8	29.7	-	-	-	-	18	14
0 - 8'	55.0	27.0	58.3	48	31.0	21	47	31
9 - 14'	34.5	25.3	33.7	39	34.9	35	30	46
15 - 21'	7.2	17.3	7.5	12	31.0	42	5	9
22' and over	1.5	.7	.5	1	3.1	2	-	-
<u>Type</u>								
Not known	13.2	35.7	-	-	-	-	29	23
Single	62.5	41.3	-	59	-	65	50	37
Tandem	24.3	23.0	-	41	-	35	21	40
Average life of machine	25.5 years		20.4 years		20.3 years		20.1 years	

The 8-foot disc harrow is the most common size on farms except in the Saskatchewan prairie region. It is also the most popular size wanted in Manitoba and the parkland area of Saskatchewan, but the 21 foot is the most popular in the Saskatchewan prairies and the 9 to 14 foot in Alberta.

Type.— The single disc is the most common on farms. It is also the most popular type wanted in Manitoba and Saskatchewan, but in Alberta the tandem type is more popular.

Table 13A. Number of Disc Harrows on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	18,901	62,106	56,765
Number wanted:			
1945	2,526	6,617	2,800
1946	1,429	4,053	2,605
1947	596	4,410	1,460
1948	495	3,533	805(1)
1949 or later	11,593	28,343	1,030(2)
<u>Total</u>	16,639	46,956	8,700

(1) Includes those wanted in 1948 and later. (2) Specific date not given.

Probable Life.- The estimated average ages ranged from 20.1 years in Alberta to 25.5 years in Manitoba.

Disc Harrows Wanted.- The total number wanted in the future although considerable is less than the number on farms, There is a slight accumulation of demand over supply but it is not very marked.

Mowers and Rakes

The size and type and probable life of mowers and of rakes are indicated in tables 14 and 15. The numbers on farms and wanted are given in tables 14A and 15A.

Table 14. Size and Type of Mowers on Farms and Wanted by Farmers in the Prairie Provinces

	Manitoba		Saskatchewan				Alberta	
	On farms:		Parkland		Prairie		On farms:	
	Wanted:		Wanted:		Wanted:		Wanted:	
	%	%	%	%	%	%	%	%
<u>Size in width of cut</u>								
Not known	1.7	24.0	-	-	-	-	25	18
0 - 5'	90.0	62.0	-	94	-	91	69	62
6' and over	8.3	14.0	-	6	-	9	6	20
<u>Type</u>								
Not known	4.4	27.9	-	-	-	-	28	21
Horse	93.6	60.6	-	95	-	94	71	64
Power	2.0	11.5	-	5	-	6	1	15
Average age of machine	25.3 years		23.3 years		25.3 years		21.3 years	

Size.- The majority of mowers on hand or wanted are 5 feet or less wide, although more of the wider mowers are wanted than are on farms. The 10 foot dump rake is still the standard size on farms and wanted, although many are uncertain what size they want since power mowers have been introduced.

Table 14A. Number of Mowers on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	30,389	61,448	59,675
Number wanted: 1945	4,015	8,188	4,545
1946	2,763	4,655	4,750
1947	979	4,234	1,950
1948	1,285	3,275	865(1)
1949 or later	19,472	28,641	795(2)
Total	28,514	48,993	12,905

(1) Includes those wanted in 1948 and later. (2) Specific date not given.

Type.- Horse drawn mowers and dump rakes still predominate although farmers indicated that they were considering power mowers and side-delivery rakes but they did not know enough about them to commit themselves.

Table 15. Size and Type of Rakes on Farms and Wanted by Farmers in the Prairie Provinces

	Manitoba		Saskatchewan				Alberta	
	On	Wanted	On	Wanted	On	Wanted	On	Wanted
	%	%	%	%	%	%	%	%
<u>Size in width</u>								
Not known	1.8	29.1	-	-	-	-	(No	29
0 - 10'	91.4	66.3	-	96	-	93	(infor-	62
11 - 12'	6.8	4.0	-	4	-	7	(mation	9
13' and over	-	.6	-	-	-	-	(-
<u>Types</u>								
Not known	3.3	29.0	-	-	-	-	(No	
Dump	96.3	69.1	-	99	-	97	(information	
Side delivery	.4	1.9	-	1	-	3	(
<u>Average life of machine</u>								
	28.8 years		26.1 years		26.8 years		25.2 years	

Probable Life.- Both mowers and rakes are comparatively long lived machines. Mowers ranged from an estimated 21.3 years to 25.3 years of life and rakes from 25.2 to 28.8 years of average life.

Table 15A. Number of Rakes on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

		Manitoba	Saskatchewan	Alberta
		No.	No.	No.
Number on farms		27,567	54,907	50,390
Number wanted:	1945	2,695	5,088	3,595
	1946	2,591	2,796	3,425
	1947	788	2,360	1,260
	1948	1,183	2,716	635(1)
	1949 or later	19,291	29,232	1,265(2)
<u>Total</u>		26,548	42,192	10,180

(1) Includes those wanted in 1948 and later.

(2) Specific date not given.

Numbers Wanted.- The numbers of mowers and rakes are more nearly static than many other machines. The small decline recorded reflects some farm operators

plan to use one new mower or rake, instead of two old ones. There is a small accumulation of demand for mowers, probably due to increasing interest in power driven mowers.

Ensilage Cutters, Grain Grinders and Manure Spreaders

The above machines are all alike in that they are required only with live stock production. The sizes and probable life of grain grinders are indicated in table 16 and the types of manure spreaders in Manitoba and Saskatchewan with probable life, is given in table 17. The number of machines on farms and wanted is given for ensilage cutters in table 16A, for grain grinders in 16B and for manure spreaders in table 17A.

Table 16. Size and Type of Grain Grinders on Farms and Wanted by Farmers in the Prairie Provinces

	Manitoba		Saskatchewan				Alberta	
	On farms	Wanted	On farms	Wanted	On farms	Wanted	On farms	Wanted
	%	%	%	%	%	%	%	%
<u>Size of burr</u>								
Not known	1.9	30.2	-	-	-	-	(No	
0 - 6"	3.8	1.9	-	2	-	3	(information	
7 - 8"	19.1	9.2	-	18	-	13	(
9 - 10"	49.3	37.8	-	50	-	51	(
11" and over	25.9	20.9	-	30	-	33	(
<u>Average life of machine</u>								
	22.5 years		18.5 years		18.7 years		16.5 years	

Size of Grinders.- The sizes of plate type grain grinders are given by diameter of grinding burr. The 10 inch size seemed to be the most popular size.

Table 16A. Number of Ensilage Cutters on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	3,290	3,315	(
Number wanted:			(
1945	583	580	(
1946	291	161	(No
1947	84	147	(
1948	159	83	(infor-
1949 or later	2,656	1,982	(mation
Total	3,773	2,953	

In Alberta, there are large numbers of hammer mills used for grinding grain. This introduces an additional problem in classifying grinders or ensilage cutters, because the hammer mills are sometimes used as ensilage or straw cutters and sometimes as grain grinders. In general, they were classed with ensilage cutters in Manitoba and Saskatchewan, while in Alberta no tabulation for grain grinders was made as it was felt that it might be misleading.

Table 16B. Number of Grain Grinders on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	: : Manitoba	: : Saskatchewan	: : Alberta
	No.	No.	No.
Number on farms	21,566	42,182	39,055
Number wanted: 1945	1,613	3,866	2,310
1946	703	2,253	3,740
1947	539	1,975	1,555
1948	708	1,147	840(1)
1949 or later	18,520	25,659	1,315(2)
Total	22,083	34,900	9,760

(1) Includes those wanted in 1948 and later.

(2) Specific date not given.

Type.- Manure spreaders were mostly of the four wheel type.

Table 17. Size and Type of Manure Spreaders on Farms and Wanted by Farmers in the Prairie Provinces

	: Manitoba		: Saskatchewan				: Alberta	
	On farms	Wanted	On farms	Wanted	On farms	Wanted	On farms	Wanted
Types	%	%	%	%	%	%	%	%
Not known	-	20.5	-	-	-	-	(No	
4 wheel	100.0	72.7	-	88	-	85	(information	
2 wheel	-	6.8	-	12	-	15	(
Average life of Machine	26.97 years		24.2 years		23.6 years		20.4 years	

Probable Life.- The estimated average life of grinders by areas ranged from 16.5 years in Alberta to 22.5 years in Manitoba. Manure spreaders ranged from 20.4 years to 27.0 years of estimated life.

Table 17A. Size and Type of Manure Spreaders

Table 17A. Number of Manure Spreaders on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	5,940	5,853	6,830
Number wanted: 1945	2,413	1,551	945
1946	495	518	2,105
1947	279	606	540
1948	285	242	960(1)
1949 or later	3,934	2,371	585(2)
Total	7,406	5,288	5,135

(1) Includes those wanted in 1948 and later.

(2) Specific date not given.

Machines Wanted.- Ensilage cutters, grain grinders and manure spreaders all show the same long time trend, namely that more are wanted in Manitoba than are already on farms, and less are wanted in Saskatchewan. This is probably due to their relation to cattle and sheep production and the current trends in these two provinces. There seems to be a small accumulation of demand, but not very marked, in all three machines.

Trailers and Wagons

Trailers and wagons are related in function and since the introduction of rubber tired wagons they are very difficult to segregate or classify. The sizes are largely standardized, but some differences in type appear, which are listed for trailers in table 18 and forwwagons in table 19.

Table 18. Size and Type of Trailers on Farms and Wanted by Farmers in the Prairie Provinces

	Manitoba	Saskatchewan	Alberta
	Parkland	Prairie	
On	On	On	On
farms	farms	farms	farms
Wanted	Wanted	Wanted	Wanted
%	%	%	%

Types

Not known	9.6	44.2	-	-	-	-	(No
4 wheel	64.4	35.7	-	76	-	67	(
2 wheel	26.0	20.1	-	24	-	33	(information

Average life of machine	19.4 years	15.6 years	15.5 years	15.2 years
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Type.- The high wagon still seems to be preferred. It must be remembered, however, that a common way to get low trucks is to take an old high wagon and replace the wheels with low steel wheels. This may mean that preferences for high wheels only means a preference for newer wagons with sound wheels. The

four wheel trailer is the most popular type.

Table 18A. Number of Trailers on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	8,519	9,504	11,465
Number wanted:			
1945	1,000	1,185	960
1946	289	334	815
1947	222	565	415
1948	172	535	100(1)
1949 or later	5,944	4,760	500(2)
Total	7,627	7,379	2,790

(1) Those wanted in 1948 and later.

(2) Specific date not given.

Probable Life.- Average estimates of the life of wagons ranged from 21.9 years to 28.6 years and trailers ranged from 15.2 to 19.4 years.

Table 19. Size and Type of Wagons on Farms and Wanted by Farmers in the Prairie Provinces

	Manitoba		Saskatchewan				Alberta	
	On	Wanted	On	Wanted	On	Wanted	On	Wanted
	%	%	%	%	%	%	%	%
Types								
Not known	13.0	46.2	-	-	-	-	(No	
High	49.4	31.2	-	64	-	72	(
Low	37.6	22.6	-	36	-	28	(information	
Average life of machine	28.6 years		24.4 years		25.7 years		21.9 years	

Wanted.- The trailers and wagons wanted, as expanded from the sample, are enumerated in tables 18A and 19A, respectively. There are fewer wanted in Manitoba and Saskatchewan than already exist, although there still seems to be one or more wanted per farm in each of these provinces. The decrease would be due to the use of trucks. There does not seem to be a large accumulation of demand that will not be taken care of by those displaced when trucks are available.

Table 19A. Number of Wagons on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	71,463	174,183	134,220
Number wanted:			
1945	1,850	2,543	1,505
1946	965	1,717	1,985
1947	462	3,963	670
1948	550	1,945	360(1)
1949 or later	54,371	91,733	760(2)
Total	58,198	101,901	5,280

(1) Those wanted in 1948 and later.

(2) Specific date not given.

Stationary Engines and Windmills

The recent trend towards rural electrification has introduced a degree of uncertainty into the future of stationary engines and windmills. Many operators stated that their decision would be changed if electric power became available at their farms. However, most of the farm operators did not expect to have electricity for a long time and the tabulations concerning stationary engines in table 20 and 20A, and windmills in table 20B, were recorded with that understanding.

Table 20. Size and Type of Stationary Engines on Farms and Wanted by Farmers in the Prairie Provinces

	Manitoba	Saskatchewan		Alberta
	On farms	On farms	On farms	On farms
	Wanted	Wanted	Wanted	Wanted
	%	%	%	%

Size in horse power

Not known	1.8	30.7	-	-	-	-	-
$\frac{1}{2}$ - 1 H.P.	6.7	4.7	-	3	-	4	14
$1\frac{1}{2}$ - 2 H.P.	54.6	41.6	-	56	-	54	9
$2\frac{1}{2}$ - 3 H.P.	17.6	14.9	-	23	-	28	49
$3\frac{1}{2}$ - 5 H.P.	8.5	5.1	-	10	-	12	28
6 H.P. or more	10.8	3.0	-	8	-	2	-
Average life of machine	22.2 years	19.9 years	19.0 years	17.7 years			

Size of Engines.- The most popular size of engine was the $1\frac{1}{2}$ horse power unit. However, there was a wide range of sizes on farms and wanted.

Life of Engines.- The average estimated life ranged from 17.7 years to 22.2 years.

Table 20A. Number of Stationary Engines on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	: : Manitoba : No.	: : Saskatchewan : No.	: : Alberta : No.
Number on farms	20,964	44,126	38,825
Number wanted: 1945	2,078	7,408	3,590
1946	619	3,480	3,085
1947	985	2,607	1,175
1948	219	1,647	290(1)
1949 or later	13,198	20,524	1,030(2)
Total	17,099	35,666	9,170

(1) Includes those wanted in 1948 and later.

(2) Specific date not given.

Number Wanted.- Both Saskatchewan and Manitoba figures indicate that there will be fewer windmills and stationary engines wanted than are on hand. This is probably due to anticipation of rural electrification. The total number wanted, however, is still quite large. Whether the demand will be reflected in the purchase of new machines depends on the development of rural electrification.

Table 20B. Number of Windmills on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	: : Manitoba : No.	: : Saskatchewan : No.	: : Alberta : No.
Number on farms	3,489	10,528	9,445
Number wanted: 1945	74	542	880
1946	30	603	345
1947	-	341	430
1948	25	160	320(1)
1949 or later	2,726	6,064	415(2)
Total	2,855	7,710	2,390

(1) Includes those wanted in 1948 and later.

(2) Specific date not given.

Potato Diggers

Potato diggers are nearly all of the one row size and of the revolving slat table type. The number on farms and wanted is given in table 20C. In Manitoba and Saskatchewan, slightly fewer diggers are wanted than are already on farms. This appears to be due to an increase in acreage on farms on which potatoes are grown rather than an increase in the number of growers.

Table 20C. Number of Potato Diggers on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	:	:	:	:	
	:	Manitoba	Saskatchewan	Alberta	:
		No.	No.	No.	
Number on farms		2,506	1,453	1,795	
Number wanted:	1945	228	123	270	
	1946	51	54	-	
	1947	63	54	-	
	1948	119	-	-	
	1949 or later	1,521	821	140(1)	
Total		1,982	1,052	410	

(1) Specific date not given.

Cream Separators

Sizes of cream separators and the percentage found of each size is given in table 21. Separators having a capacity of 400 to 550 pounds of milk per hour seemed to be the most popular, although there was a demand for all other sizes.

Table 21. Size and Type of Cream Separators on Farms and Wanted by Farmers in the Prairie Provinces

	:	:	Saskatchewan	:	:	:	:	:	:
	:	Manitoba	Parkland	Prairie	:	Alberta	:	:	:
	On	On	On	On	:	On	:	:	:
	farms: Wanted	farms: Wanted	farms: Wanted	farms: Wanted	:	Farms: Wanted	:	:	:
	%	%	%	%	%	%	%	%	%

Size by capacity in pounds

Not known	2.4	40.8	-	-	-	-	-	31
0 - 250 pounds	1.7	.5	-	3	-	7	-	6
250 - 399 "	10.1	6.2	-	19	-	23	-	10
400 - 550 "	52.4	33.3	-	55	-	52	-	28
551 - 650 "	19.0	11.0	-	13	-	13	-	10
651 pounds and over	14.4	8.2	-	10	-	5	-	15
Average life of machine	20.9 years	17.0 years	17.0 years	16.4 years				

Probable Life.- The probable life of cream separators ranged from 16.4 to 20.9 years.

Wanted.- In table 21A, the number of cream separators wanted is indicated to be less than those now on farms. This is probably the result of several conflicting trends. Wholemilk consumption has increased and many former cream shippers are shipping wholemilk or to cheese factories. On the other hand some cream shippers with rather beefy cows have gone over to straight beef production.

Table 21A. Number of Cream Separators on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number of farms	25,638	63,107	64,800
Number wanted: 1945	1,161	3,352	1,830
1946	764	2,186	2,735
1947	531	2,917	1,100
1948	386	2,419	465(1)
1949 or later	20,800	36,342	1,255(2)
Total	23,642	47,216	7,385

- (1) Includes those wanted in 1948 and later.
 (2) Specific date not given.

Milking Machines

Since these machines are few in number no attempt was made to tabulate them by size, type or length of life. The number on hand and wanted, as expanded from the sample, is shown for Manitoba in table 21B. These machines are largely confined to the wholemilk areas and as would be expected, the demand seems to be fairly static.

Table 21B. Number of Milking Machines on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	2,376	(1,390
Number wanted: 1945	288	(No	215
1946	203	(information	575
1947	-	(60
1948	-	(40(1)
1949 or later	1,948	(300(2)
Total	2,439		1,190

- (1) Includes those wanted in 1948 and later.
 (2) Specific date not given.

Grain Cleaners

The types of grain cleaners and their percentage occurrence are to be found in table 22. The expanded number wanted is given in table 22A.

Type.— The fanning mill with air draughts for sorting by weight is the most popular with other types preferred for special purposes.

Table 22. Types of Grain Cleaners on Farms and Wanted by Farmers in the Prairie Provinces

	Saskatchewan							
	Manitoba		Parkland		Prairie		Alberta	
	On	Wanted	On	Wanted	On	Wanted	On	Wanted
	%	%	%	%	%	%	%	%
Types								
Not known	49.2	59.6	-	-	-	-	(
Fanning mill	46.6	37.9	-	91	-	87	(No	
Disc	1.1	1.0	-	9	-	13	(information	
Rolling mill	3.1	1.5	-	-	-	-	(
Average life of machine	25.5 years		22.0 years		22.4 years		21.3 years	

Number wanted.— There are fewer grain cleaners wanted than are on hand, but this seems to be primarily because certain farmers obtained machines at some time which did not suit their purposes and while they still have these machines and use them occasionally, they will not replace them. There are still quite large numbers wanted.

Table 22A. Number of Grain Cleaners on Farms and Wanted in the Prairie Provinces, 1945-1949 and Later Dates

	Manitoba	Saskatchewan	Alberta
	No.	No.	No.
Number on farms	20,097	36,269	31,965
Number wanted:			
1945	2,672	3,264	2,280
1946	544	1,739	2,815
1947	448	2,306	990
1948	589	1,426	330(1)
1949 or later	14,350	17,504	1,110(2)
Total	18,603	26,239	7,525

- (1) Includes those wanted in 1948 and later.
 (2) Specific date not given.

Drag Harrows

It was deemed inadvisable to tabulate drag harrows even though they are numerous and useful, as they never seem to wear out. They may need new teeth, but nearly every farm has some harrows and no one seemed to think in terms of replacing a set.

Special Machines

There are a great number of special machines for various purposes. While some of these, such as the newer machines for stacking feed like the Jay Hawk stacker, promise to revolutionize methods of handling live stock feed, they are as yet in the experimental stage and since they are not generally known by farmers, it was impossible to get a statement concerning their future use. Therefore, they were considered to be outside the scope of this report.

